

**REMARKS**

The specification has been amended by replace a recitation “reed” with “lead” as originally presented. Claims 21 and 22 have been canceled. Thus, no new matter has been added. Applicants respectfully request entry of the amendments and reconsideration of the present application in view of the amendments and the remarks set forth below.

**Specification**

In the previous amendment, a recitation “lead switch” was replaced with “reed switch” to correct the clerical error. However, the amendment has been objected to under 35 U.S.C. 132(a), as being introducing new matter in to the disclosure. Applicants respectfully submit, for the record, that “reed switch” is the appropriate translation of the Japanese characters “リードスイッチ” in question, as explained below.

The recitation “reed switch” is expressed in phonogram in the original Japanese specification, and as shown in copy of the Japanese-English dictionary attached as Appendix, “lead” and “reed” are commonly expressed in the same characters “リード” since Japanese does not distinguish “r” sound and “l” sound. (Please see underlined portion) Further, search results of Wikipedia for “reed switch” and “lead switch” indicate that “lead switch” is not proper technical term.

In addition, a partial copy of the machine translation of JP 2004-251900A provided by Japanese Patent Office and the publication of its US counter part US 2004-183723A are also attaches as well as the bibliographic data and the INPADOC Patent Family List. In the paragraph [0055] of JP 2004-251900A, the Japanese characters “リードスイッチ” in question is seen and “reed switch” is used in the machine translation. (Please see underlined)

Thus, it appears that “reed switch” is an appropriate translation of the Japanese characters “リードスイッチ”.

Nevertheless, Applicants amend the recitation “reed switch” to “lead switch” as originally presented, in order to accelerate the examination. Applicant respectfully request withdrawal of the objection.

**Application No.:** 10/766,068  
**Filing Date:** January, 28, 2004

Claim Rejections – 35 USC § 112 and 35 USC § 103

Claims 21 and 22 have been rejected under 35 USC § 112, first paragraph as failing to comply with the written description requirement, and rejected under 35 USC § 103 as being unpatentable over Inamoto et al., in view of Cozzette et al and Neel et al.

In view of coverage of the rest of the claims, Claims 21 and 22 have been canceled. Applicant respectfully request withdrawal of the rejections.

Allowable Subject Matter

Claims 1-11 and 14-20 have been allowed. The applicants acknowledge the allowance of the claims with appreciation.

**CONCLUSION**

In the light of the applicant's amendments to the claims and the following Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, Applicant is not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. Applicant reserves the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that Applicant has made any disclaimers or disavowals of any subject matter supported by the present application.

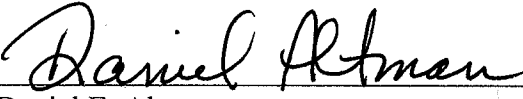
**Application No.:** 10/766,068  
**Filing Date:** January, 28, 2004

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: August 3, 2009

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## **APPENDIX**

ウェブ | 登録サイト | 画像 | 音楽 | 動画 | ニュース | ブログ | 辞書 | 知恵袋 | 地図 | 商品

**YAHOO! 辞書** リード で始まる 項目を 検索

**JAPAN**

☐ 国語 ☐ 類語 ☐ 英和 ☐ 和英 ☒ すべての辞書

## 辞書検索結果

リード

[PR] <婚活割引で無料体験> 30代からの『婚活』はYahoo!縁結びから ※20禁

国語辞書 類語辞書 英和辞書 和英辞書 すべての辞書

Yahoo!百科事典で検索

国語辞書との一致 (1~5件目 / 19件)

検索辞書: 大辞泉 提供: JapanKnowledge

1. リード【Carol Reed】<sup>英</sup>  
[1906~1976] 英国の映画監督。ドキュメンタリータッチの緊迫感あふれる作風で知られる。作「邪魔者は殺せ」「第三の男」など。
2. リード【Herbert Read】<sup>英</sup>  
[1893~1968] 英国の詩人・批評家。文芸批評・美術批評のほか、政治問題にも言及。詩集「戦いの終わり」、評論「芸術の意味」「芸術と社会」など。
3. リード【lead】<sup>英</sup>  
[名] (スル) 1 うまくできるように相手を導くこと。また、先頭に立って集団を導くこと。「—のうまい捕手」「団員を—する」「流行を—する」「時代を—する」2 競技・競走などで、相手に差をつけて優位に立つ... [さらに]
4. リード【LEED】<sup>英</sup>  
《low energy electron diffraction》低エネルギー電子回折。固体表面研究の実験手段として使われる。
5. リード【read】<sup>英</sup>  
読むこと。

国語辞書結果を全件表示

大辞林の結果を見る

和英辞書との一致 (1~3件目 / 3件)

検索辞書: プログレッシブ和英中辞典 提供: JapanKnowledge

1. リード<sup>英</sup>  
[木管楽器の] a reed リードオルガン | a reed organ リード楽器 | a reed instrument
2. リード<sup>英</sup>  
1 [先に立つこと] the lead クラブをリードする lead [take the lead in] a club 女性をリードしてワルツを踊る lead a woman in a waltz 2 [優勢である... [さらに]]
3. リードオンリーメモリー<sup>英</sup>  
[コンピュータで] read-only memory ((略ROM))

ニューセンチュリー和英辞典の結果を見る

Yahoo!百科事典との一致 (1~5件目 / 12件)

検索辞書: 日本大百科全書 提供: 小学館

# Reed switch

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The **reed switch** is an electrical switch operated by an applied magnetic field. It was invented at Bell Telephone Laboratories in 1936 by W. B. Ellwood. It consists of a pair of contacts on ferrous metal reeds in a hermetically sealed glass envelope. The contacts may be normally open, closing when a magnetic field is present; normally closed and opening when a magnetic field is applied; or one normally open and one normally closed. The switch may be actuated by a coil, making a reed relay<sup>[1]</sup>, or by bringing a magnet near to the switch. Once the magnet is pulled away from the switch, the reed switch will go back to its original position.

Reed switches are used in reed relays, which are used for temporarily storing information in mid-20th Century telephone exchanges. As well, they are for electrical circuit control, particularly in the communications field; as proximity switches for burglar alarms and as switches in electronic pedal keyboards used by pipe organ players and in electronic children's toys which have sound effects that need to be activated.

## Contents

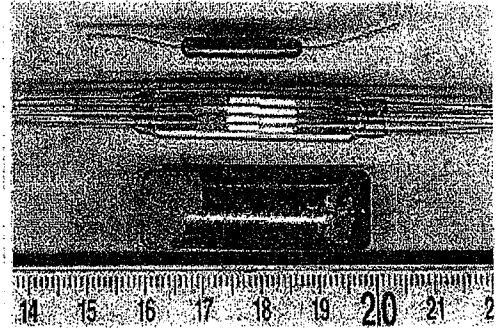
- 1 Description
- 2 Uses
- 3 Reed relays
- 4 Further reading
- 5 External articles and references

## Description

The reed switch contains a pair (or more) of magnetizable and electrically conductive metal reeds which have end portions separated by a small gap when the switch is open. The reeds are hermetically sealed in opposite ends of a tubular glass envelope.

A magnetic field (from an electromagnet or a permanent magnet) will cause the contacts to pull together, thus completing an electrical

circuit.<sup>[2]</sup> The stiffness of the reeds causes them to separate, and open the circuit, when the magnetic field ceases. Another configuration contains a non-ferrous normally-closed contact that opens when the ferrous normally-open contact closes. Good electrical contact is assured by plating a thin layer of precious metal over the flat contact portions of the reeds; low-resistivity silver is more suitable than corrosion-resistant gold in the sealed envelope. There are also versions of reed switches with mercury



Reed relay and reed switches



Showing the contacts clearly

# Search results

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Lead switch

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### ▪ Switch

In electronics , a switch is an electrical component that can break an electrical ... between the common lead of the switch and a pole or poles. ...

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### ▪ Engl

**MEASUREMENT METHOD BY CHEMICAL SENSOR, AND CHEMICAL SENSOR TYPE MEASUREMENT DEVICE**

Publication number: JP2004251900 (A)

Publication date: 2004-09-09

Inventor(s): SAITO SOICHI; ITO SHIGEFUMI

Applicant(s): TANITA SEISAKUSHO KK; NIPPON ELECTRIC CO

Classification:

- International: G01N27/416; C12M1/40; G01N27/327; G01N27/416; C12M1/40; G01N27/327; (IPC1-7): G01N27/416; C12M1/40; G01N27/327

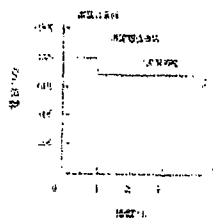
- European:

Application number: JP20040023637 20040130

Priority number(s): JP20040023637 20040130; JP20030022070 20030130

Abstract of JP 2004251900 (A)

**PROBLEM TO BE SOLVED:** To provide a means for stabilizing sensor sensitivity characteristic, in a measurement using a chemical sensor, by rapidly solving the instability of the sensor sensitivity characteristic which is found early when starting the use of the chemical sensor by dipping the dry chemical sensor in a buffer solution as a storage solution and applying a measuring potential between a working electrode and a reference electrode. ; **SOLUTION:** When the use of the chemical is started, the dry chemical sensor is dipped in the buffer solution as the storage solution, and a two-stage initial processing operation is then performed, whereby the sensor sensitivity characteristic can be stabilized. The two-stage initial processing operation comprises applying a first initial processing potential having the same direction as the measurement potential and showing an absolute value larger than the measurement potential between the working electrode and the reference electrode for a first initial processing time followed by changing to a second initial processing potential equal to the measurement potential, and applying the second initial processing potential for a second initial processing time. ; COPYRIGHT: (C) 2004, JPO&NCIP





## Family list

3 application(s) for: JP2004251900 (A)

- 1 **Messmethode mit Hilfe eines chemischen Sensors und eines chemischen Sensormessgerätes**  
Inventor: SOICHI SAITO [JP]; NARUSHI ITO      Applicant: TANITA SEISAKUSHO KK [JP]  
[JP]  
EC: G01N27/403; G01N33/487B2      IPC: G01N27/26; G01N27/403; G01N27/49; (+8)  
Publication info: DE102004004392 (A1) — 2004-09-09
- 2 **MEASUREMENT METHOD BY CHEMICAL SENSOR, AND CHEMICAL SENSOR TYPE MEASUREMENT DEVICE**  
Inventor: SAITO SOICHI; ITO SHIGEFUMI      Applicant: TANITA SEISAKUSHO KK; NIPPON ELECTRIC CO  
[JP]  
EC:      IPC: G01N27/416; C12M1/40; G01N27/327; (+8)  
Publication info: JP2004251900 (A) — 2004-09-09
- 3 **Method for measuring by means of chemical sensor, and chemical sensor type measuring apparatus**  
Inventor: SAITO SOICHI [JP]; ITO NARUSHI      Applicant: SAITO SOICHI; ITO NARUSHI  
[JP]  
EC: G01N27/403; G01N33/487B2      IPC: G01N27/26; G01N27/403; G01N27/49; (+6)  
Publication info: US2004182723 (A1) — 2004-09-23

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JP 2004-251900 A 2004.9.9

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(12) 公開特許公報(A)

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特開2004-251900

(P2004-251900A)

(43) 公開日 平成16年9月9日(2004.9.9)

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C12M 1/40	C12M 1/40 B	
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	GO1N 27/46 311K	
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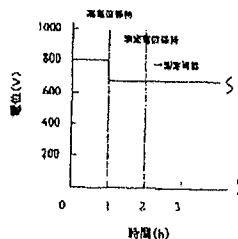
(54) 【発明の名称】 化学センサによる測定方法、ならびに化学センサ型測定装置

## (57) 【要約】

【課題】 化学センサを用いた測定において、乾燥状態の化学センサを保存液とする緩衝液中に浸漬し、作用極と参照極との間に測定電位を印加して、化学センサを使用開始する際、この初期段階で見出されるセンサ感度特性の不安定さを速やかに解消して、センサ感度特性の安定化を図る手段を提供する。

【解決手段】 化学センサを使用開始する際、乾燥状態の化学センサを保存液とする緩衝液中に浸漬した後、作用極と参照極との間に測定電位と同一方向の電位であって、測定電位よりも大きな絶対値を示す第一の初期処理電位を、第一の初期処理時間の間印加し、引き続き、測定電位と同一の第二の初期処理電位に変更して、この第二の初期処理電位を第二の初期処理時間の間印加する二段階の初期処理操作を施すことで、センサ感度特性の安定化が達成される。

【選択図】 図3



(16)

JP 2004-251900 A 2004.9.9

過した時点では、センサ感度は、本来の水準で安定化が図られていることが判明した。

【0052】

図4に、上記の3種の使用開始時の処理を施した、グルコースセンサのセンサ感度（応答電流値）の経日的変化を評価した結果を対比して示す。これらの結果を総合すると、乾燥状態で保管する間に、この酵素電極型化学センサの作用極、対極表面の微視的な状況は、測定電位を印加して、24時間以上保存液中に浸漬して、安定化が図られた状態とは異なった状態に偏移するものの、測定電位よりも有意に高い電位を印加して、保存液中に浸漬、保持する処理を施すことで、電極表面の状態は、本来の安定化した状態へと復することが可能であることが判明した。なお、この高い電位を印加した状態から、通常の測定電位に変更した際、電極表面上に蓄積される電荷に起因する電気二重層の変化は、速やかに行われ、作用極と参照極と間を流れるベース電流が一定になるものの、酵素電極型化学センサ全体として、静電的に偏移した状態の安定化を達成するには、さらに時間を要することが判る。なお、このさらなる安定化には、印加電位の変更量にも依るものの、長くとも、1時間以内の保持で十分であると判断される。

【0053】

すなわち、作製後、乾燥状態で保管されている酵素電極型化学センサについて、使用開始する際、本発明にかかる第一の測定方法に従う、使用開始処理操作を行うことで、その酵素電極型化学センサ本来のセンサ感度への安定化を短時間で達成できることが確認された。この使用開始処理操作を終えた後、センサ感度の安定化がなされ、一定期間、感度較正を行わなくとも、精度、再現性のよい測定を実施することが可能となる。

【0054】

また、以上の結果を踏まえて、かかる酵素電極型化学センサ用の測定装置本体9に関して、上述する使用開始処理操作に対応する印加電位設定、保持時間の条件を、ソフト的に機能追加した。対応して、ハード的にも、上述する一連の使用開始処理操作が完了し、安定した測定が可能となった旨を表示する機構をも付加した。

【0055】

例えば、上述する使用開始処理操作機能を付加した測定装置本体9では、乾燥状態のセンサを測定器本体9に接続してから、

(i) センサが保存液に浸漬される位置に設置（リードスイッチ等で検知）

(ii) 電位を印加せずに5分間保持

→有機膜全体が十分に保存液で濡れていない状態で電位を印加すると膜破壊を起こすため。

(iii) 750 mVで3時間保持

(iv) 450 mVで1時間保持

(v) 450 mVはそのままだが、測定器本体部のインジケータが「測定可」となる。のような、ソフト的な電位印加タイミング制御、ならびに、それに利用するリードスイッチ等で検知機構、測定器本体部のインジケータ部の追加など、ハード的な変更がなされる。

【0056】

（第2の実施形態）

図5は、本発明にかかる第2の実施形態に用いる化学センサ構成の一例を模式的に示す断面図である。図2に示す化学センサは、3極方式の化学センサに構成されており、絶縁性基板1上に、導体からなる作用極2および対極3、ならびに、参照極4が形成されている。これら3極方式の電極系の上には、酵素膜5が形成されており、所謂、酵素電極型の化学センサとされている。なお、この酵素電極では、酵素膜5の表面側に制限透過膜11を、また、酵素膜5の電極側には選択透過膜12を設けてあり、これらの膜を固定化する際、電極系と選択透過膜12との間に、接着層6を設けている。絶縁性基板1は液透過性を示さず、電極系と液との接触は、液透過性を有する、制限透過膜11、酵素膜5、選択透過膜12、ならびに接着層6とを介して達成される。この最表面に制限透過膜を具える、酵素電極を利用する酵素電極型化学センサの具体例は、例えば、特許掲載公報第294

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sensor sensitivity, it became clear that stabilization was attained with the original level at the latest.

[0052]

The result of having evaluated daily change of the sensor sensitivity (response current value) of a glucose sensor which processed the time of three sorts of above-mentioned beginning of using is shown in drawing 4 by comparison. While keeping it by dryness putting these results together, the microscopic situation on the working pole of this enzyme electrode type chemicals sensor, and the surface of a counter electrode, The state where impressed working potential, it was immersed into 24-hour or more conservation liquid, and stabilization was attained is performing processing which impresses high potential more nearly intentionally than working potential, and is immersed and held in conservation liquid, although deviated in the state it having differed, It became clear that the state of an electrode surface could be restored to the state where original was stable. Change of the electric double layer which originates in the electric charge accumulated on an electrode surface from the state where this high potential was impressed when it changes into the usual working potential. It is carried out promptly, and although a working pole, a reference pole, and the base current that flows through between become fixed, in order to attain stabilization in the state where it deviated electrostatically, as the whole enzyme electrode type chemicals sensor, it turns out that time is required further. Although it depends also on the changing amount of impression potential, it is judged with it being long by this further stabilization that maintenance of less than 1 hour is enough.

[0053]

That is, after production, about the enzyme electrode type chemicals sensor currently kept by dryness, when starting to use, it was checked that the stabilization to the original sensor sensitivity of the enzyme electrode type chemicals sensor can be attained in a short time by performing beginning-of-using treating operation according to the first measuring method concerning this invention. After finishing this beginning-of-using treating operation, even if stabilization of sensor sensitivity is made and it does not perform fixed time and a sensitivity calibration, it becomes possible to carry out good measurement of accuracy and reproducibility.

[0054]

Based on the above result, the functional addition of the conditions of impression potential setting out corresponding to the beginning-of-using treating operation mentioned above and retention time was carried out in soft about the measuring device body 9 for these enzyme electrode type chemicals sensors. It corresponded and a series of beginning-of-using treating operation mentioned above also in hard also added the mechanism which indicates that was completed and the stable measurement of was attained.

[0055]

With for example, the measuring device body 9 which added the beginning-of-using treating operation function mentioned above

After connecting the sensor of dryness to the measuring instrument body 9,

(i) A sensor installs in the position immersed in conservation liquid (it detects with a reed switch etc.).

(ii) Hold for 5 minutes, without impressing potential.

If potential is impressed in the state where the whole -> organic layer has not fully got wet with conservation liquid, in order to cause film destruction.

(iii) Hold by 750 mV for 3 hours.

(iv) Hold by 450 mV for 1 hour.

(v) It becomes "good" but measuring the indicator of a measuring instrument body part as it is 450 mV.

\*\* — the hard change of the addition of the indicator section of a detector style and a measuring instrument body part, etc. is made with the potential applying timing control [ like ] like software, the reed switch used for it, etc.

[0056]

(A 2nd embodiment)

Drawing 5 is a sectional view showing typically an example of chemical sensor composition used